

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method for manufacturing a fuel cell separator, comprising the steps of:

obtaining a mixture by mixing a thermoplastic resin and a conductive material, wherein the thermoplastic resin is a resin selected from the group consisting of: ethylene / vinyl acetate copolymers, ethylene / ethyl acrylate copolymers, straight-chain low-density polyethylene, polyphenylene sulfide and modified polyphenylene oxide, and wherein the conductive material includes carbon particles selected from the group consisting of black lead, Ketchen black and acetylene black;

forming with the mixture a separator starting material having gas flow passage grooves in a contact face thereof; and

irradiating the contact face of the separator starting material with an electron beam.

2. (Canceled)

3. (Withdrawn) A method for bonding a fuel cell separator and an electrode

diffusion layer to one another, comprising the steps of:

disposing a carbon fiber electrode diffusion layer on a thermoplastic resin separator;

applying a welding pressure to the electrode diffusion layer and separator;
and

vibrating at least one of the electrode diffusion layer and the separator to produce frictional heat between said electrode diffusion layer and said separator and thereby welding the electrode diffusion layer to the separator.

4. (Withdrawn) The method for bonding a fuel cell separator and an electrode diffusion layer according to claim 3, comprising the further step of setting the welding pressure to between about 10 to 50kgf/cm² (about 980 to 4903kPa).

5. (Previously Presented) A method for manufacturing a fuel cell separator, comprising:

preparing a first separator and a second separator, each of said first and second separators being made of thermoplastic resin, at least one of said first and second separators having cooling water passage grooves formed therein;

bringing the first and second separators together such that the cooling water passage grooves formed in said at least one of the first and second separators is covered by the other of said first and second separators;

applying a welding pressure to the first and second separators;

vibrating one of the first and second separators to produce frictional heat between the first and second separators and thereby welding the second separator

to the first separator so as to form cooling water passages between said first and second separators.

6. (Previously Presented) The fuel cell separator manufacturing method according to claim 5, comprising the further step of setting the welding pressure to between about 10 to 50kgf/cm² (about 980 to 4903kPa).

7. (Withdrawn) The method for bonding a fuel cell separator and an electrode diffusion layer according to claim 4, comprising the further step of setting a vibration frequency to about 240Hz.

8. (Previously Presented) The fuel cell separator manufacturing method according to claim 6, comprising the further step of setting a vibration frequency to about 240Hz.